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Remarks

Claims 1-22 were pending in the application. Claims 1-11 were rejected. Claims 12-22 were withdrawn. No claims were merely objected to and no claims were allowed. By the foregoing amendment, claims 13-16 and 18-22 are canceled, claim 1 is amended, and claims 23-32 are added. No new matter is presented.

Restriction

Restriction was required as follows:

- I. Claims 1-11, drawn to an apparatus having elongate conduit; an initiator; at least one sensor; and a controller, classified in class 134, subclass 184.
- II. Claims 12-16, drawn to a monitoring system having a communications interface; a processor; and a memory coupled to processor, classified in class 122, subclass 379.
- III. Claims 17-22, drawn to a method cleaning by at a central location, monitoring data; responsive to said monitored data causing a detonative cleaning, classified in class 134, subclass 18.

Applicants affirm the election of Group I with traverse. Traverse is on the grounds that examination of all the claims would not present an undue burden. Although separately classified, the search classes of the three groups are expected to largely, if not completely, overlap. Accordingly, if the restriction requirement is withdrawn, claims 1-12, 17, and 23-32 will be examined. If not withdrawn, claims 1-11 and 23-32 will be examined.

Title

The title was asserted as not descriptive. Applicants traverse the objection.

First, the title is believed compliant with 37 CFR 1.72 which requires that it "must be as short and specific as possible." Second, Applicants request that any further objection be withheld until subject matter has been allowed. See, e.g., MPEP 1302.01 which specifies that the title should be checked when the application is apparently ready for allowance. Third, Applicants invite the examiner to propose a specific change.

Claim Rejections-35 U.S.C. 112

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Claims 1-11 were rejected under 35 U.S.C. 112(2). Applicants respectfully traverse the rejection.

It was asserted: "It is not clear how and where the initiator is connected to the conduit." Office action, page 3. Claim 1 specifies that the initiator is "positioned to initiate a reaction of the fuel and oxidizer to produce the shockwave". This is perfectly clear. No further specificity is required.

Claim Rejections-35 U.S.C. 102

Claims 1, 2, and 5 were rejected as being anticipated by Petrovich et al. (RU2094728). Applicants respectfully traverse the rejection.

Elements 17 and 18 of Petrovich et al. were asserted as being the sensors. It is assumed that the exhaust temperature sensor 18 was asserted to be the combustion emission sensor of claim 5.

Claim 1 has been amended to identify means for ion sensing. Support for this is found, for example, at page 12, paragraph 0035 ("ionization probes") and page 13, paragraph 0037 (identifying sensing of "ions such as CH- and OH-") and page 13, paragraph 0038 (identifying "ion sensors"). Petrovich et al. fails to disclose or suggest such means. Petrovich et al. further fails to disclose or suggest the "means for detecting one or more chemical species" of claim 30 (for which support is found in as-filed claim 21, paragraph 0009 and the aforementioned ion sensing means support). There is similarly no suggestion for the claim 32 "sensor detecting one or more chemical species".

Claim Rejections-35 U.S.C. 103

Claims 1-5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Garbus et al. (SU328318) in view of Golubov et al. (RU2054151). Applicants respectfully traverse the rejection.

Garbus et al. was asserted for general combustion cleaning features. Golubov et al. was cited for various sensors. However, the combination fails to disclose the claimed means and sensors identified above relative to Petrovich et al.

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Claims 6-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Garbus et al. and Golubov et al. and further in view of Petrovich et al. Applicants respectfully traverse the rejection.

The rejection is insufficient for the same reasons noted immediately above regarding the underlying rejection of claim 1. Furthermore, there is no suggestion for the combination of local and central controllers of claim 6. The combination would, at worst, suggest alternatives. No element has been cited as providing the service requests of claim 7. No element has been asserted as being the preprogrammed plurality of different cleaning processes and their associated execution of claim 10.

The added dependent claims further identify uses of the means and sensors of the independent claims for which support is found in the same locations in the specification. Without limitation, for example, the references further fail to disclose use of the protection of ions or other chemical species to verify detonation.

Accordingly, Applicants submit that claims 1-12, 17, and 23-32 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

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